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growers especially had found it to interfere seriously with their profits. The injury was caused by the projection of the sporangia which covered the flowers and leaves of the roses as if profusely dusted with black pepper. The flowers were almost unsaleable as the first impression was that the black dots were Aphides.

Mr. J. B. Ellis, of Newfield, N. J., to whom he was indebted for the identification of the species, had informed him that it was somewhat rare in that vicinity. In the greenhouses referred to they were in immense profusion, the conditions of growth being probably more favorable. Mr. Meehan described the growth of the plant and the behavior of the asci in the generation and expulsion of the sporangia, which corroborated the facts detailed in the memoir of Eugene Coemans, published in 1859 in the *Bulletin of the Royal Academy of Sciences of Brussels*. M. Coemans found the plant on half-dried cow-droppings, in August, and in these greenhouse cases it was also growing in half-rotten cow-manure used for enriching the soil. Mr. Ellis reports that it is sometimes found on other manures, and so may be less rare than supposed. The projection of the sporangia has been noted by European observers, and originated Fore's name *Pilobolus*, literally the hat- or cap-thrower. The sporangia appear as small black caps on the top of the crystal-like asci, and are expelled with great force. By careful measurements they were found to be thrown when the direction was perpendicular, to a height of four feet. Coemans does not seem satisfied that the exact process has been made clear by which this remarkable projection is effected. It has been supposed that carbonic acid gas is generated, which, distending the cysts, causes them at length to burst at the thinnest part, which is the apex, and the sporangia are then blown out by the gas, as would be a cork from a bottle of champagne. Again Coemans finds a double membrane to the asci, and believes that by the agency of light the inner membrane contracts in a different manner to the outer, and that the projection is the result of this peculiar contraction. Mr. Meehan observed that the sporangia were expelled from the interior of the asci before they were finally discharged, and that they were always projected in a direct line from the centre, which would hardly be the case if a mere explosion of gas directed the movement. One large rose-grower had found, that sprinkling the surface of the earth under the rose plants with about the eighth of an inch of dry earth, effectually allayed the projectile annoyance.

DECEMBER 20.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-five persons present.

The deaths of Edw. Taylor and Dr. Isaac I. Hayes, members, were announced.

The Committee, appointed Nov. 29th, to prepare an expression of the Academy's appreciation of Dr. Ruschenberger's services to the society, presented the following report which, together with the resolutions proposed, was unanimously adopted:—

To the Academy of Natural Sciences of Philadelphia:

Your Committee, appointed November 29th, 1881, to prepare and report at a future meeting, an expression of the Academy's appreciation of the services of Dr. W. S. W. Ruschenberger, who declines a re-election to the office of President, respectfully reports:

Dr. W. S. W. Ruschenberger was elected a member of the Academy of Natural Sciences of Philadelphia, May, 1832, and became its President, December, 1869, succeeding Dr. Isaac Hays. He has been re-elected at each succeeding annual election, hence he has occupied this position for an unbroken period of twelve years, which, with one exception, is the longest term of service of any President of the Academy.

When the project for the erection of a new building was first proposed, Dr. Ruschenberger manifested so much interest therein, that when on the 14th of November, 1865, a committee was appointed, "to devise methods for advancing the prosperity and efficiency of the Academy by the erection of a building of a size suitable to contain the collections," he was by unanimous consent chosen its Chairman. He was likewise Chairman of the Committee of Forty, appointed December 26th, 1865, for the purpose of obtaining the funds necessary for the erection of a new building, and also was, and still is, Chairman of the Board of Trustees of the Building Fund, organized January 11th, 1867.

From the inception of the enterprise to its consummation in the occupancy of the new building by the Academy in 1876, Dr. Ruschenberger constantly gave to it his best energies, and to him more than to any other man the Academy owes the commodious building which it now occupies.

There were times when many members of the Committee doubted and even despaired of the completion of their service, but in the darkest hours Dr. Ruschenberger never faltered either in faith or works, but with his quiet persistent force, pushed forward the enterprise, and sustained the courage of his associates. His untiring interest in the welfare of the Academy, led him

personally to supervise the contracts for building, and to inspect the progress of the work almost daily. He was thus able to save thousands of dollars to the Trustees, and to see the present building completed at a cost greatly within the original estimate. Those only who were associated with him in this the great achievement of his life, can rightly value the courage, patience, devotion, indomitable perseverance and ceaseless activity displayed by him throughout the entire period.

As a presiding officer, both at the meetings of the Academy and in the Council, his extreme punctuality, dignity of manner, unfailing courtesy and accurate acquaintance with parliamentary usage leading to prompt decisions, which seldom or never failed to command support, have increased in no small degree the debt of gratitude due him by the institution which he has served so faithfully and well.

Of his services to the scientific world this is not the time nor the occasion to speak in detail, but suffice it to say, they are such as have been long and widely recognized.

In view of the foregoing recital of facts, we deem it every way fitting that the Academy should suitably express and place upon record, its grateful sense of the long and faithful services of its retiring President, and we accordingly propose the following resolutions for its adoption :

Resolved, That the thanks of this Academy be, and they are hereby tendered to Dr. W. S. W. RUSCHENBERGER for the eminent services he has rendered both before and since he has held its honored position of President.

Resolved, That this report, and these resolutions be entered in full upon the minutes, and published in the Proceedings, and that a copy thereof suitably engrossed, attested by the Vice-Presidents and Secretaries of the Academy be presented to him.

ISAAC C. MARTINDALE,
JOHN H. REDFIELD,
S. RAYMOND ROBERTS,

PHILADELPHIA, Dec. 20th, 1881.

Committee.

Varying Influence of Heat on Flower-buds and Leaf-buds.—Mr. THOMAS MEEHAN referred to specimens of *Cratægus*, sent by Mr. Case, of Indiana, on which the sender remarked that the buds were larger through the winter on alternate years—and that the plants flowered freely in the seasons corresponding with those following the large buds. Mr. Meehan said, that though it must